REMARKS

Claims 1-25 are pending in the application. Applicant would like to thank the examiner for the indication of allowable subject matter for claims 6 and 22-25.

Claim 1

Claim 1 was rejected under 35 U.S.C. § 103(a) as unpatentable over Heyrman (U.S. Patent Application Publication No. 2004/0143833) in view of Nakhimovsky (U.S. Patent No. 6,058,460). This rejection is respectfully traversed.

In the memory allocation method according to claim 1, a first contiguous memory section is determined to be allocated to a set of threads of the same type and a second contiguous memory section is determined to be allocated to a data buffer, such that memory spaces in the first contiguous memory section are accessible by the threads of the same type and memory spaces in the second contiguous memory section are accessible by any thread. Claim 1 is patentable over Heyrman in view of Nakhimovsky, because neither Heyrman nor Nakhimovsky teaches or suggests the use of two contiguous memory sections, the first of which is to be accessed by threads of the same type and the second of which is to be accessed by any thread.

The examiner relies on Heyrman for the teaching that "threads types are allocated resources that are resident within the same physical subsystem." Although a physical subsystem may include a memory subsystem, Heyrman fails to teach or suggest the use of a contiguous memory section that is to be allocated to and accessed by threads of the same type. A teaching that a physical subsystem may include a memory subsystem is insufficient, because resources that are part of the same memory subsystem are not necessarily located in the same contiguous memory section as required by claim 1.

The examiner relies on Nakhimovsky for the teaching of "data buffers accessible by the threads." The passage of Nakhimovsky cited by the examiner teaches that each thread is mapped to one of the memory pools that have been established in the system memory and dynamically allocated user memory blocks from the associated memory pool. As amended, claim 1 recites that memory spaces associated with a buffer are accessible by any thread. In Nakhimovsky, a memory block is not accessible by any thread, but is only accessible by the thread to which it was mapped.

Based on the foregoing distinctions, Applicant respectfully submits that claim 1 is patentable over Heyrman in view of Nakhimovsky.

Claims 2-5 and 7-18

Claims 2-5 and 7-18 were rejected under 35 U.S.C. § 103(a) as unpatentable over Heyrman in view of Nakhimovsky and further in view of Wolrich (U.S. Patent No. 6,631,462). This rejection is respectfully traversed.

Claims 2-5 and 7 depend from claim 1 and are patentable for the same reasons as set forth above for claim 1.

Claim 8, as amended, recites a method for accessing a memory resource in which two samples are simultaneously processed, such that during the simultaneous processing: (i) a first contiguous memory section allocated to threads of the first type is accessed by threads of the first type, but not by threads of the second type, (ii) a second contiguous memory section allocated to threads of the second type is accessed by threads of the second type, but not by threads of the first type, and (iii) a third contiguous memory section allocated to a data buffer is accessed by threads of either the first type or the second type. The accessing scheme recited in claim 8 is not taught or suggested in any of the cited references. Both Heyrman and Nakhimovsky teach dynamic allocation of resources to threads but neither teaches or suggests that memory spaces in a first contiguous memory section are accessed by threads of a first type but not by

threads of a second type, and that memory spaces in a second contiguous memory section are accessed by threads of the second type but not by threads of the first type. Wolrich teaches sharing of resources by different threads but fails to cure the deficiencies of Heyrman and Nakhimovsky. Therefore claim 8 is patentable over the combination of Heyrman, Nakhimovsky and Wolrich. Claims 9-13 depend from claim 8 and are patentable for the same reasons.

Claim 14, as amended, recites a computer program product that includes instructions for allocating memory spaces in a first contiguous memory section to threads of a same type for access by threads of such same type and memory spaces in a second contiguous memory section to a data buffer for access by any thread. The instructions for allocating memory spaces as recited in claim 14 are not taught or suggested in any of the cited references. Both Heyrman and Nakhimovsky teach dynamic allocation of resources to threads but neither teaches or suggests that threads of the same type are allocated memory spaces in the same contiguous memory section. Wolrich teaches sharing of resources by different threads but fails to cure the deficiencies of Heyrman and Nakhimovsky. Therefore claim 14 is patentable over the combination of Heyrman, Nakhimovsky and Wolrich. Claims 15-18 depend from claim 14 and are patentable for the same reasons.

Claims 19-21

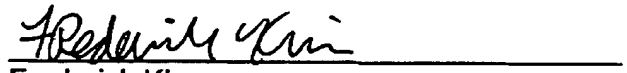
Claims 19-21 were rejected under 35 U.S.C. § 103(a) as unpatentable over Taylor (U.S. Patent No. 6,630,935) in view of Nakhimovsky. This rejection is respectfully traversed.

Claim 19, as amended, recites a computer system including a CPU that is programmed to carry out the step of allocating memory spaces in a first contiguous memory section to threads of a same type for access by threads of such same type and memory spaces in a second contiguous memory section to a data buffer for access by any thread. A CPU that is programmed as recited in claim 14 is not taught or suggested in any of the cited references. Taylor

teaches the allocation of memory spaces to different threads, but does not teach or suggest that memory spaces allocated to threads of the same type are located in the same contiguous memory section. Nakhimovsky teaches dynamic allocation of resources to threads, but does not teach or suggest that memory spaces allocated to threads of the same type are located in the same contiguous memory section. Therefore claim 19 and claims 20-21 which depend therefrom are patentable over Taylor in view of Nakhimovsky.

In view of the foregoing, this application is now in condition for allowance and an early notice of the same is respectfully requested.

Respectfully submitted,



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